WASTE DISPOSAL

The Case Of The Missing Trash Can

Grade Level : 6

Subjects:
Science 4.1, 4.2, 4.3, 4.4, 5.2
Math 5.0. 6.0, 7.0

Time:
activity should extend over one entire school day, with analysis at the end of the day or at the beginning of the second day.

Setting:
classroom

Materials:
an individual plastic grocery bag for each student & teacher,
stick-on name labels or permanent marker for labeling,
balance scale,
disposable gloves if requested by student (however, remind students that they are handling their own trash),
containers marked organic, inorganic, and compostable
calculators

Skills:
measuring, sorting, analyzing, modeling

Vocabulary:
organic, inorganic, recyclable, compostable

Source:
Watauga County Recycling Curriculum Committee

Summary: The trash can will be removed from the classroom for the entire day. Students and teachers will have their own individual trash bag into which they will place all waste for the day. Students will analyze their throw-away habits and attempt to reduce the mass of waste.

Objective: Students will focus on what they throw away and attempt to reduce the mass of waste they produce during the school day.

Background: We are accustomed to having trash cans available when we need them and most of us give little thought as to what happens to an item once we dispose of it. No longer is "out of sight, out of mind" an appropriate attitude about waste. Some areas of North Carolina no longer have a landfill to dispose of solid waste, but must pay to have every ounce of garbage trucked to other areas. By reducing the mass of our disposal items, we can save money and energy, preserve natural resources, and reduce pollution.

Leading Question: Could our class become less wasteful? Could we reduce the disposal cost to our county or city?

Procedure:

1. Remove all trash cans from the classroom. (If possible, obtain the cooperation of everyone in your area and remove all trash cans that are in areas where children go for classes during the day)
2. Give each child a grocery bag and a name label (teacher must use one also) to put all waste in during the day. (Note: Do not take bag to cafeteria. Lunch waste is covered in lesson ("How Much of our Lunch Becomes Waste?") See page 6.21
3. At the end of the day, have each student mass his bag and record the mass on the name label attached on the bag.
4. Ask each child to sort his/her waste into organic and inorganic piles. (Discuss how to identify organic and inorganic substances), mass each pile and record. Total all mass and determine the disposal cost. (Find out cost per ton for your local area)
5. Sort all items into recyclable, compostable, or disposable.
6. Mass all waste that must be placed in the trash can because it is not compostable or recyclable.
7. Compare the cost of disposal before sorting to the cost of disposal after sorting. Calculate costs over one year and then compare.

The Case Of The Missing Trash Can (continued)

What Now?

1. Can we, as a class, make a difference in the waste stream at our school? How about the disposal cost for our county/city? If every student in our school could sort recyclables and compostables from disposables during the school day, how much could be saved in disposal cost per year?

2. Challenge every student to carefully separate and recycle all items at home. Using your class as a model, calculate the amount of disposal cost that could be saved if all 6th graders in your school system separated and recycled.

DATA TABLE FOR NO TRASH CAN DAY

Name: _____

Date: _____

1. Mass of trash collected: _____
2. Mass of organic matter: _____
3. Mass of inorganic matter: _____
4. Mass of recycled matter: _____
5. Mass of compostable matter: _____
6. Mass of matter that must be thrown away: _____
7. Mass reduced: _____